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BSI Standards Publication

Steel and iron — Review of available methods of analysis

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National foreword

This Published Document is the UK implementation of ISO/TR 9769:2018.

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A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 1, *Methods of determination of chemical composition*.

This fourth edition cancels and replaces the third edition (ISO/TR 9769:1991), which has been technically revised to update all the standard methods for the determination of chemical composition of steel and iron.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

TECHNICAL REPORT **ISO/TR 9769:2018(E)**

Steel and iron — Review of available methods of analysis

1 Scope

This document gives guidelines for the determination of the chemical composition of steel and iron by reference to published International Standards, including their range of application and principles of the methods.

Graphical representation of the precision data precision data for the methods is given in Annex A.

The list of International Standards is summarized in Annex B.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
routine method
method calibrated against reference materials, certified reference materials or against standard solutions commercially available that is widely used for control purposes (day-to-day analysis)

4 International Standards for determining the chemical composition of steel and iron, their range of application and principles of the methods

4.1 Mono-elemental methods

4.1.1 Aluminium, Al

Document: ISO 2658:1990, *Steel — Determination of aluminium content — Flame atomic absorption spectrometric method*.

Range of application:

— determination of acid-soluble and/or total aluminium contents between a mass fraction of 0,005 % and a mass fraction of 0,20 % in non-alloyed steel.

Principle of the method:

a) dissolution of a test portion in dilute hydrochloric and nitric acids;

b) fusion of the acid-insoluble material with a mixture of orthoboric acid and potassium carbonate;

c) spraying of the solution into a dinitrogen monoxide-acetylene flame;